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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,903	09/22/2003	Steven T. Fink	071469-0305780	7379
909	7590	11/16/2004	EXAMINER	
PILLSBURY WINTHROP, LLP			TRAN, THUY V	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	

2821

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/664,903	<b>Applicant(s)</b> FINK, STEVEN T.	
	<b>Examiner</b> Thuy V. Tran	<b>Art Unit</b> 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This is a response to the Applicant's filing on September 22<sup>nd</sup>, 2003. In virtue of this filing, claims 1-21 are currently presented in the instant application.

#### ***Drawings***

1. The drawings submitted on 09/22/2003 are accepted.

#### ***Claim Objections***

2. Claim 12 is objected to because it contains a trademark or trade name KAPTON® as a limitation therein. A specific name of the type of flex-print material should be used instead.

Appropriate correction is required.

3. Claims 17 and 18 are objected to because of the following informalities:

Claim 17, line 3, "a" (first and second occurrences) should be changed to --the--;

Claim 18, line 3, "a" should be changed to --the--; and

Claim 18, line 4, "an" should be changed to --the--.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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5. Claims 1 and 6-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson et al. (Pub. No.: US 2002/0125223 A1).

With respect to claim 1, Johnson et al. discloses, in Fig. 7A, an assembly configured to be coupled to components of a plasma reactor; the assembly comprises (1) an electrostatic shield, and (2) a process tube, wherein the electrostatic shield and the process tube are nested (being compacted together in the same shape) such that the electrostatic shield resides around the process tube and, at times of process tube removal from the plasma reactor, the electrostatic shield is extracted with the process tube (since the electrostatic shield, the process tube, and the helical coil are packed altogether; see Fig. 7A).

With respect to claim 6, Fig. 7A of Johnson et al. shows that the electrostatic shield is attached to the process tube.

With respect to claim 7, Johnson et al. discloses, in Fig. 7A, an assembly configured to be coupled to components of a plasma reactor; the assembly comprises (1) a process tube, and (2) an electrostatic shield patterned directly on the process tube.

6. Claim 21 is rejected under 35 U.S.C. 102(e) as being anticipated by Johnson (U.S. Patent No. 6,758,948).

With respect to claim 21, Johnson discloses, in Fig. 4, a plasma reactor which comprises (1) a process tube [82], and (2) an electrostatic shield [14] coupled to the process tube [82] (via bias shield [80] and insulator spacer [88]; see Fig. 4), wherein the electrostatic shield [14] and the process tube [82] are configured such that the electrostatic shield [14] resides around the process tube and, at times of process tube removal from the plasma reactor, the electrostatic

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shield [14] is also extracted (since the electrostatic shield [14] and the process tube [82] are coupled to each other via bias shield [80] and insulator spacer [88]; see Fig. 4).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 10, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (Pub. No.: US 2002/0125223 A1) in view of Johnson (U.S. Patent No. 6,511,577).

With respect to claims 2 and 10, Johnson et al. discloses all of the claimed subject matter, as expressly recited in claims 1 and 7, respectively, except for at least one spira-shield electrically coupled to the electrostatic shield.

Johnson discloses the use of a spira-shield for RF connections between elements (see col. 6, lines 25-27).

It would have been obvious to one of ordinary skills in the art at the time of the invention to modify the assembly of Johnson et al. by additionally arranging a spira-shield electrically coupled to the electrostatic shield for RF connections between elements since such an employment of the spira-shield for the stated purpose has been well known in the art as evidenced by the teachings of Johnson (see col. 6, lines 25-27).

With respect to claim 17, Johnson et al. discloses, in Fig. 7A, an assembly and a corresponding method of fabricating the assembly including a housing [CHAMBER WALL], a process tube, and an electrostatic shield; the method comprises nesting the process tube within

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the electrostatic shield to form the assembly, and electrically coupling the electrostatic shield to the housing. Johnson et al. does not teach a spira-shield.

Johnson discloses the use of a spira-shield for RF connections between elements (see col. 6, lines 25-27).

It would have been obvious to one of ordinary skills in the art at the time of the invention to modify the assembly of Johnson et al. by additionally arranging a spira-shield electrically coupled to the electrostatic shield for RF connections between elements since such an employment of the spira-shield for the stated purpose has been well known in the art as evidenced by the teachings of Johnson (see col. 6, lines 25-27).

9. Claims 3-5, 8-9, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (Pub. No.: US 2002/0125223 A1) in view of Johnson (U.S. Patent No. 6,758,948).

With respect to claim 3, Johnson et al. discloses all of the claimed subject matter, as expressly recited in claim 1, except for at least one insulating spacer located between the electrostatic shield and an end of the process tube.

Johnson discloses, in Fig. 4, an assembly comprising insulating spacers [88] located between an electrostatic shield [14] and ends of a process tube [82].

It would have been obvious to one of ordinary skills in the art at the time of the invention to modify the assembly of Johnson et al. by additionally configuring an insulating spacer between the ends of the process tube and the electrostatic shield to avoid bias interferences between conductive components/elements of the assembly since such a configuration of the

insulation spacers for the stated purpose has been well known in the art as evidenced by the teachings of Johnson (see col. 13, lines 63-64).

With respect to claims 4 and 5, neither Johnson et al. nor Johnson teaches that the insulating spacers position the electrostatic shield from the process tube, at their closest point, by a maximum distance of one inch, or approximately  $3/8$  of an inch. However, the combination of Johnson et al. and Johnson specifically teach that the insulation spacers are employed to create a distance between the process tube and the electrostatic shield and thus to avoid bias interferences between conductive components/elements of the assembly (see Johnson, col. 13, lines 63-64). Furthermore, such a distance could be well defined by a person skilled in the art based upon the strength of the electromagnetic or electric field created by, and/or the characteristics of, parts or components of the assembly. Therefore, to define the distance from the electrostatic shield and the process tube of the combination of Johnson et al. and Johnson such as at a maximum of one inch or approximately  $3/8$  of an inch for avoidance of bias or field interferences between conductive components/elements of the assembly would have been deemed obvious to an artisan skilled in the art.

With respect to claims 8-9, Johnson et al. discloses all of the claimed subject matter, as expressly recited in claim 7, except for an explicit teaching of employing at least one of sputtering, evaporation, or metal vapor deposition to pattern the electrostatic shield directly on the process tube, and a plating process for increasing a thickness of the electrostatic shield.

Johnson discloses sputtering techniques and a plating process for patterning a system including a process tube and an electrostatic shield (see col. 1, lines 15-20 and 41-51; col. 3, lines 50-60; col. 5, lines 45-52; and col. 13, lines 30-44).

It would have been obvious to one of ordinary skills in the art at the time of the invention to employ the techniques of sputtering and plating processing to pattern the electrostatic shield directly on the process tube of Johnson et al. to facilitate monitoring the thickness of the coating and thus to insure a desired thickness of the shield since such an application of these techniques of sputtering and plating processing with the stated advantage has been well known in the art as evidenced by the teachings of Johnson (see col. 13, lines 30-34).

With respect to claims 18-19, Johnson et al. discloses, in Fig. 7A, an assembly and a corresponding method of fabricating the assembly including a process tube and an electrostatic shield; the method comprises providing the process tube, and patterning the electrostatic shield onto the process tube. Johnson et al. does not provide an explicit teaching of employing at least one of sputtering, evaporation, or metal vapor deposition to pattern the electrostatic shield directly on the process tube, and a plating process for increasing a thickness of the electrostatic shield.

Johnson discloses sputtering techniques and a plating process for patterning a system including a process tube and an electrostatic shield (see col. 1, lines 15-20 and 41-51; col. 3, lines 50-60; col. 5, lines 45-52; and col. 13, lines 30-44).

It would have been obvious to one of ordinary skills in the art at the time of the invention to employ the techniques of sputtering and plating processing to pattern the electrostatic shield directly on the process tube of Johnson et al. to facilitate monitoring the thickness of the coating and thus to insure a desired thickness of the shield since such an application of these techniques of sputtering and plating processing with the stated advantage has been well known in the art as evidenced by the teachings of Johnson (see col. 13, lines 30-34).

10. Claims 11-12 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (Pub. No.: US 2002/0125223 A1) in view of Ishii et al. (U.S. Patent No. 5,571,366).

With respect to claim 11 and 12, Johnson et al. discloses, in Fig. 7A, an assembly configured to be coupled to components of a plasma reactor; the assembly comprises (1) a process tube, and (2) an electrostatic shield, wherein the electrostatic shield and the process tube are nested (being compacted together in the same shape) such that the electrostatic shield resides around the process tube and, at times of process tube removal from the plasma reactor, the electrostatic shield is extracted with the process tube (since the electrostatic shield, the process tube, and the helical coil are packed altogether; see Fig. 7A). Johnson et al. does not teach that the electrostatic shield be made of a flex-print material which is a polyimide film (or under trademark named KAPTON® as claimed).

Ishii et al. discloses, in Fig. 15, a plasma processing apparatus comprising an electrostatic shield [91], which includes two insulating films [93a, 93b] made of polyimide film (see col. 13, lines 17-24).

To employ a flex-print material such as polyimide film to make the electrostatic shield of Johnson et al. to prevent an electrostatic force of the RF from acting on the chamber would have been obvious to one of ordinary skills in the art at the time of the invention since such the use of such polyimide film material for making the electrostatic shield for the stated purpose has been well known in the art as evidenced by the teachings of Ishii et al. (see col. 13, lines 1-2).

With respect to claim 15, Fig. 7A of Johnson et al. shows that the electrostatic shield and the process tube are coupled together.

With respect to claim 16, Fig. 7A of Johnson et al. shows that the electrostatic shield and the process tube are bonded together.

11. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (Pub. No.: US 2002/0125223 A1) in view of Ishii et al. (U.S. Patent No. 5,571,366) as applied to claim 11 above, and further in view of Johnson (U.S. Patent No. 6,511,577).

With respect to claim 13, the combination of Johnson et al. and Ishii et al. disclose all of the claimed subject matter, as expressly recited in claim 11, including two sheets [93a, 93b] of the flex-print material (see Ishii et al.; Fig. 15), except for on top and bottom to allow for contacts with a spira-shield.

Johnson discloses the use of a spira-shield for RF connections between elements (see col. 6, lines 25-27).

It would have been obvious to one of ordinary skills in the art at the time of the invention to modify the assembly of the combination of Johnson et al. and Ishii et al. by additionally arranging a spira-shield electrically coupled to the electrostatic shield for RF connections between elements since such a use of the spira-shield for the stated purpose has been well known in the art as evidenced by the teachings of Johnson (see col. 6, lines 25-27). Furthermore, to leave the top and the bottom of the sheets to make contacts with the spira-shield would have been deemed obvious to a person skilled in the art.

With respect to claim 14, the combination of Johnson et al. and Ishii et al. disclose all of the claimed subject matter, as expressly recited in claim 11, except for at least one spira-shield electrically coupled to the electrostatic shield.

Johnson discloses the use of a spira-shield for RF connections between elements (see col. 6, lines 25-27).

It would have been obvious to one of ordinary skills in the art at the time of the invention to modify the assembly of the combination of Johnson et al. and Ishiii et al. by additionally arranging a spira-shield electrically coupled to the electrostatic shield for RF connections between elements since such a use of the spira-shield for the stated purpose has been well known in the art as evidenced by the teachings of Johnson (see col. 6, lines 25-27).

12. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (Pub. No.: US 2002/0125223 A1) in view of Johnson (U.S. Patent No. 6,758,948) as applied to claim 18 above, and further in view of Johnson (U.S. Patent No. 6,511,577).

With respect to claim 20, the combination of Johnson et al. and Johnson disclose all of the claimed subject matter, as expressly recited in claim 18, except for at least one spira-shield electrically coupled to the electrostatic shield.

Johnson discloses the use of a spira-shield for RF connections between elements (see col. 6, lines 25-27).

It would have been obvious to one of ordinary skills in the art at the time of the invention to modify the assembly of the combination of Johnson et al. and Johnson by additionally arranging a spira-shield electrically coupled to the electrostatic shield for RF connections

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between elements since such a use of the spira-shield for the stated purpose has been well known in the art as evidenced by the teachings of Johnson (see col. 6, lines 25-27).

*Citation of relevant prior art*

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Johnson (U.S. Patent No. 6,630,364) discloses a method and system for controlling the bombardment of a wall of an ESRF.

Prior art Johnson (U.S. Patent No. 6,385,977) discloses a cooling system and process.

*Inquiry*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -5:00 PM).

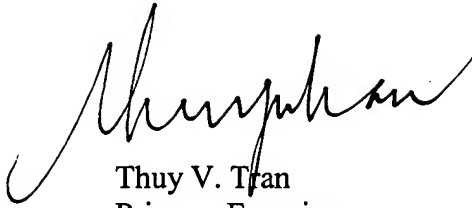
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Thuy V. Tran', written in a cursive style.

Thuy V. Tran  
Primary Examiner  
Art Unit 2821

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